

NEW ABSTRACT

A position determining system for determining a position of a rotor of a rotating motor has sensors that are coupled to the rotor. The sensors generate, in response to a rotation of the rotor, a quadrature signal that has sine and cosine components. The position determining system calculates a sum ( $A^2$ ) of a squared value of the sine component ( $A^2 \sin^2 x$ ) and a squared value of the cosine component ( $A^2 \cos^2 x$ ). An amplitude correction factor ( $A$ ) is calculated as the squared root of the sum ( $A^2$ ). An amplitude corrected sine component ( $\sin(x)$ ) is obtained by dividing the sine component ( $A \sin(x)$ ) by the amplitude correction factor ( $A$ ). An amplitude corrected cosine component ( $\cos(x)$ ) is obtained by dividing the cosine component ( $A \cos(x)$ ) by the amplitude correction factor ( $A$ ).